

CHAPTER 17. MAINTENANCE MANAGEMENT

I. INTRODUCTION

A. SCOPE

This Chapter establishes policy, outlines responsibilities, and sets standards for the maintenance of Navy family housing.

B. POLICY

1. Family housing will be maintained at a standard which provides adequate and habitable accommodations consistent with the preservation of plant investments for the duration of the requirement for the facilities.

2. All Field Activities will establish a maintenance and repair inspection program.

3. All Field Activities will develop and implement a short- and long-range maintenance plan.

C. REFERENCES

1. Defense Acquisition Regulation

2. NAVFAC 11101.94: "Maintenance and Repair Inspection Program (MARIP) for Family Housing"

3. NAVFAC MO-110: "Paints and Protective Coatings"

4. NAVCOMPT Manual, Volume 3, Chapters 5 and 7

D. SUMMARY

This Chapter is organized into the four topical areas summarized below:

1. Responsibilities. The Commander, Naval Facilities Engineering Command (COMNAVFACENGCOM), establishes and directs the application of maintenance standards and provides supporting resources. The Engineering Field Divisions (EFD's) will establish specific amplifying instructions, conduct maintenance studies or reviews, and provide supporting funds. The Field Activity exercises operational control of all housing maintenance, planning, programming, scheduling, and executing, and accounts for expenditures of funds.

2. Maintenance Planning and Executing. This section provides guidelines and criteria for the planning, programming, budgeting, and execution phases of the family housing maintenance program including the short- and long-range maintenance plan, inspections, discussion of accounting and cost collection systems, methods of accomplishing work, means of initiating work, and approval and verification of maintenance work performed.

3. Standards of Maintenance. All family housing real property assets including dwelling units, garages, carports, grounds, and other facilities identified on the Family Housing Property Account are to be maintained to a standard that prevents deterioration beyond that which results from normal wear and tear and which corrects deficiencies in a timely manner ensuring full life expectancy of the facilities. Standards of maintenance for family housing are provided in this section.

4. Facilities Service Contracts. Maintenance or repair services will be provided by contract under the authority of, and in accordance with, the procedures set forth in the Defense Acquisition Regulation when conditions warrant the use of a contract. The quality assurance (QA) program is the means by which the Government confirms that the quality and quantity of services and goods provided by the contractor are in compliance with the contract specifications. The QA program and the procedures for its implementation are discussed in this section.

II. RESPONSIBILITIES

A. COMMANDER, NAVAL FACILITIES ENGINEERING COMMAND

COMNAVFACENGCOM develops and administers policy, standards, procedures, and methods, and provides resources for the maintenance of Navy family housing units and other facilities on the Family Housing Property Account.

B. ENGINEERING FIELD DIVISIONS

EFD's budget for and manage the family housing maintenance program for Field Activities within their purview. In fulfilling this responsibility, EFD's will:

1. Provide funds, guidance, amplifying instructions, and on-site assistance to the Field Activities.
2. Provide COMNAVFACENGCOM with a quarterly update on Field Activities having maintenance and repair inspection programs (MARIP's) completed, in process, or scheduled.
3. Review and evaluate the Field Activity inspection summaries, establish priorities, and advise the Field Activities regarding project sub-missions.

C. FIELD ACTIVITIES

Field Activities are responsible to budget for and maintain all facilities on the Family Housing Property Account. In fulfilling this responsibility, Field Activities will:

1. Plan and execute the family housing maintenance program.
2. Develop and implement a maintenance and repair inspection program.

3. Develop short- and long-range maintenance plans.
4. Develop and implement a self-help program to aid the accomplishment of maintenance.
5. Approve all work authorizations for family housing maintenance.
6. Ensure that Flag, General, and Installation Commanders have approved all maintenance work, prior to performance other than emergency work, accomplished on units they occupy.
7. Ensure quality and completeness of work performed prior to authorization for payment.
8. Coordinate the development and execution of facilities services contracts.

III. MAINTENANCE PLANNING AND EXECUTION

Maintenance is the recurring, periodic, or scheduled work required to preserve real property facilities and furnishings in such condition that they may be effectively utilized for their designated purpose. Maintenance includes work undertaken to prevent damage to facilities and furnishings which otherwise would be more costly to restore. Maintenance is normal change of occupancy type work and other work usually scheduled annually or seasonally. Preventive maintenance is the correction of incipient failures before they develop into major defects requiring costly correction, such as oiling of furnace fan bearings, replacement of filters, painting, and so forth. Deferred maintenance comprises the validated deficiencies which must be corrected to bring facilities to a state of proper condition but have not been accomplished due to lack of resources. All maintenance work performed on facilities identified on the Family Housing Property Account is properly charged to the Family Housing Management Account, Defense (FHMA,D), BP-20, Operations and Maintenance subaccount. All costs for the maintenance of furnishings are properly charged to the FHMA,D BP-10, Operations and Maintenance subaccount.

A. MAINTENANCE PLANNING

Family housing will be maintained at a standard which provides adequate and habitable accommodations consistent with preservation of plant investments for the duration of the requirement for the facility and in keeping with the standards described in this Chapter. To provide for good management and optimum use of available resources, each Field Activity must develop a plan adapted to the local situation and organizational structure. The objective of this plan is to identify maintenance deficiencies, formulate a schedule of accomplishment, determine methods of performance, and develop funding requirements. Figure 17-1 portrays the development of a maintenance program which is submitted to the EFD as a portion of the total operations and maintenance budget for FHMA,D funds.

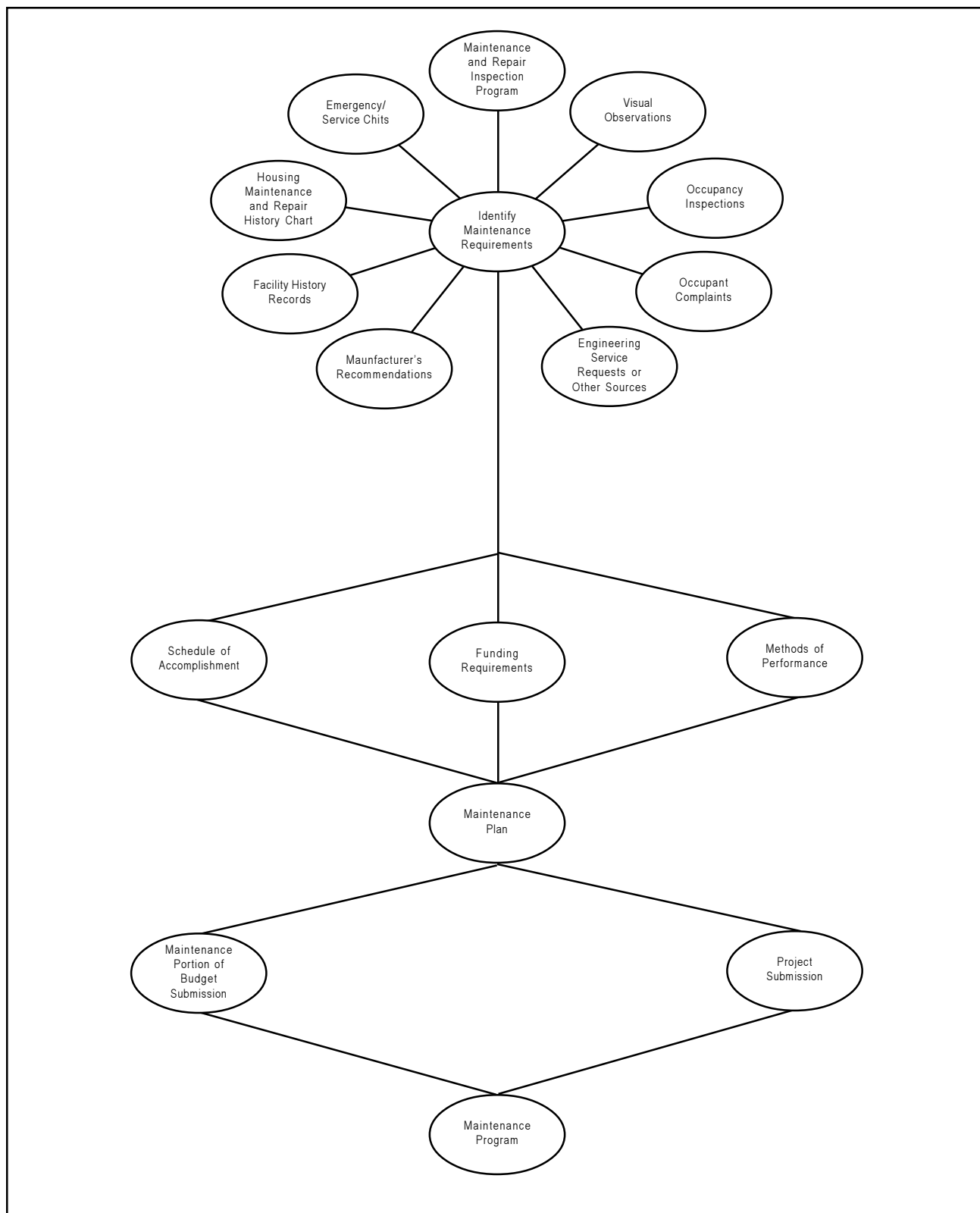


FIGURE 17-1
The Development of a Field Activity Maintenance Program

1. Identification of Requirements. Maintenance requirements are identified by three fundamental means: management observations and projections, specific inspections, and occupant observations.

a. Management observations and projections are developed from several sources, such as visual assessment of facilities on a frequent and informal basis; analyses of age and life expectancy of facilities and furnishings; facility history records; emergency/service (E/S) records; manufacturers' recommendations; or local and Family Housing Management Information System (FHMIS) reports; and outside influences.

b. Specific inspections include, but are not limited to the MARIP, which is the primary source; occupancy inspections; technical inspections; engineering or management studies and programs; and other comprehensive inspections performed on a random basis.

(1) The MARIP is a formal means of identifying maintenance and repair deficiencies in facilities on the Family Housing Property Account and provides a basis for formulation of repair projects, short- and long-range maintenance plans, and the annual operations and maintenance budget. The costs for the conduct of the MARIP will be prorated to the categories of housing undergoing inspection. Complete details on the development and implementation of the MARIP are contained in NAVFACINST 11101.94.

(2) MARIP inspections are comprehensive examinations of all facilities on the Family Housing Property Account. Inspections of a minimum sampling of 25 percent of all facilities, except other public quarters (OPQ's), will be performed on a cyclical basis. A minimum of 75 percent of OPQ's will be inspected on a cyclical basis. Specific facilities included in one inspection should be avoided for inclusion in the next inspection. Complete mechanical, electrical, structural, and other real property inspections will be conducted.

(3) Inspections may be performed by contract or by Field Activity and EFD personnel. All facilities to be inspected will be included in one effort and will not be incremented. Sample contract specifications are contained in NAVFACINST 11101.94.

(4) Inspection reports will be reviewed at the Field Activity to purge all maintenance items which are expected to be corrected in the current year and for which funds are held, all improvements, and all approved or budgeted but unaccomplished maintenance work. The remaining items identified on the inspector's report make up the deficiency listing from which the Summary Report of Activity Maintenance Deficiencies will be created and submitted to the EFD.

c. Occupant observations are an important source of identifying maintenance requirements and can be transmitted to management in many ways, e.g., personal contacts, E/S calls, community associations, or complaints to the Installation Commander or the housing organization.

2. Formulation of the Maintenance Plan. Effective maintenance management of family housing requires a comprehensive short-range maintenance plan and a sound long-range maintenance plan.

Housing Site	Bluebird Heights	# Units 200		Category of Housing C			
Item	Current Year	Budget Year		Budget Year + 1		Budget Year + 2	
Dwelling units	Quant Cost \$	Method	Quant Cost \$	Method	Quant Cost \$	Method	Quant Cost \$
Service calls	1,200 33,390	Facilities Service Contract	1,200 35,000	Facilities Service Contract	1,200 37,000	Facilities Service Contract	1,200 40,000
Routine M&R Change of Occupancy	95 24,125	Station Forces	95 25,000	Station Forces	95 28,000	Station Forces	95 32,000
Preventive Maintenance	200 20,000	Facilities Service Contract	200 20,000	Facilities Service Contract	200 24,000	Facilities Service Contract	200 27,000
Painting Interior	95 25,000	Facilities Service Contract	95 28,000	Facilities Service Contract	95 31,000	Facilities Service Contract	95 33,000
Exterior					200 60,000	Contract	
Other real property							
Grounds - 8 mowings	25 acres 10,400	Facilities Service Contract	25 acres 10,800	Facilities Service Contract	25 acres 11,300	Facilities Service Contract	25 acres 12,000
Major repair							
Replace roofs	114102,600	Contract HR-3-81			86 60,000	Contract HR-1-83	
Replace rec eqpt	3 areas 4,000	Self-help					
Replace furnaces							
Repair Sidewalk	1,800 sq ft 18,000	Contract					100 42,500
							Contract Project

FIGURE 17-2

Short-range Maintenance Plan

Bluebird Heights	200 Units		Category C
Description	Quantity	Est. Cost \$	Method
Dwelling Units			
* Service calls			
- Stoves & Refrigerators	175 calls	4,550	Facilities service contract
- Other	1,030 calls	28,840	Facilities service contract
* Routine maint/repair			
- Change of occupancy	95 units	24,125 (avg 254)	Station forces
repair floor tiles, kitchen	15 units	4,500	
replace counter tops	10 units	3,000	
minor adjustment/replace	95 units	4,750	
check weatherstrip and caulk			
doors and windows	95 units	2,375	
install light switch and change			
fixture - utility room	95 units	9,500	
- Preventive maintenance			
summer/winter changeover	200 units	800	Facilities service contract
* Interior painting (airless)			Facilities service contract
(change of occ)			
- Complete paint throughout	35 units	10,500	
- Partial paint			
75% of rooms	20 units	5,500	
50% of rooms	20 units	5,000	
25% of rooms	20 units	4,000	
Total	95 units	25,000 (avg 263)	
Other real property			
* Grounds			
- Mow semi-improved area	10 acres	2,600	Facilities service contract
- Mow improved area	15 acres	7,800	Facilities service contract
* Change lamps - parking areas	100 lights	1,000	Station forces
* Preventive maint hsg office			
and community center (summer/			
winter changeover)	2 bldgs	100	Facilities service contract
Major repairs/replacements			
* Replace roofs (shingles)	114 EM units	102,600	contract HR-3-81
* Replace playground/tot lot			
equipment, install baskets	3 areas	4,000	Self-help (cost excludes labor)
* Replace sidewalk Heritage			
Drive 7847-7857	1,800 sq ft	18,000	Contract
* Install sewer laterals			
clean out junctions	65 bldgs	130,000	Contract HR-5-80

FIGURE 17-3
Short-range Maintenance Plan
(Current Year)

a. **Short-range Maintenance Plan.** The short-range maintenance plan depicts the maintenance requirements for a 4-year period which are necessary to keep facilities in a safe, decent, and sanitary condition and preserve the plant property investment. The plan should also identify resources, methods, and means determined for the accomplishment of the work. Figure 17-2 is an example of a short-range maintenance plan which spans 4 years. Figure 17-3 illustrates the details of the current year portion of the short-range plan.

The years depicted in the short-range plan will coincide with the budget cycle; i.e., current year – the operating fiscal year which began last 1 October and will end next 30 September, budget year – the fiscal year that starts next 1 October and ends the following 30 September, budget year + 1 – the first fiscal year following the budget year, budget year + 2 – the second fiscal year following the budget year. Data identified for budget year + 2 will not be a part of the budget submission.

The primary source for the development of the short-range plan is the MARIP. All deficiencies identified during the MARIP inspection and which would logically be projected for accomplishment within 4 years will be incorporated in the plan. Other sources include projected changes of occupancy, E/S call history, and facility history records.

The short-range maintenance plan is the primary document which substantiates the Field Activity maintenance budget. The plan provides an excellent tool for determining priorities and scheduling maintenance work.

Each item on the plan should have a corresponding resource requirement; an identification of how the work will be performed, i.e., by change of occupancy rehab, by project, by service call, by self-help, and so forth; and a determination of who will perform the work, station forces, contract, or both, assuming there is an option. Guidance on the development of a self-help program is contained in Chapter 19 of this Manual.

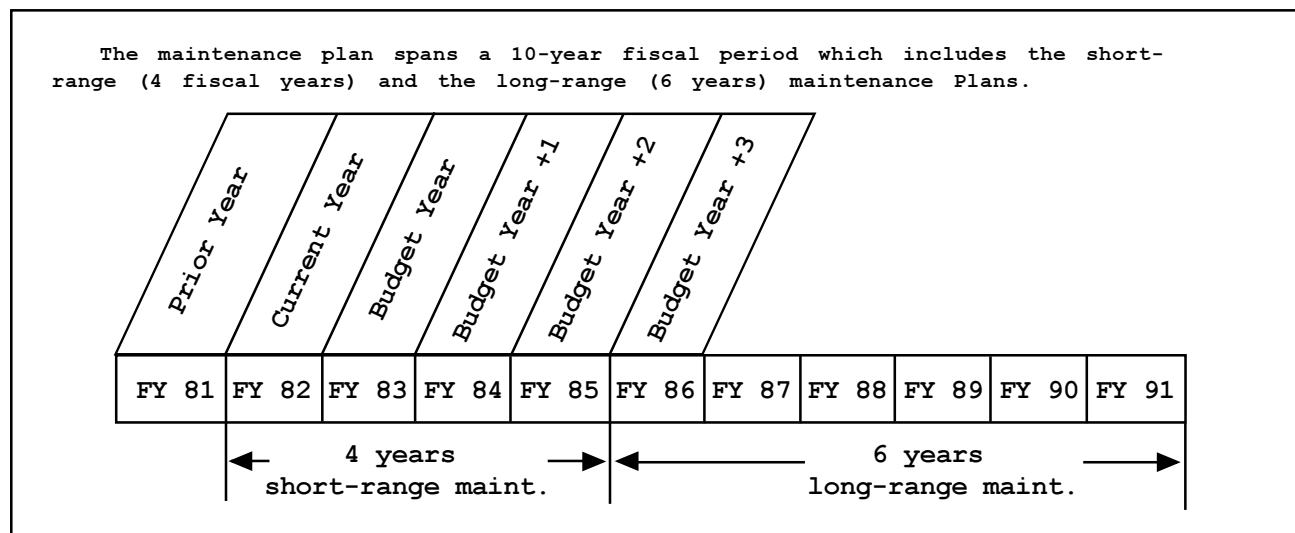


FIGURE 17-4
Short- and Long-Range Maintenance Plan

b. Long-range Maintenance Plan. The long-range maintenance plan is an extension of the short-range plan spanning at least a 6-year period beginning with the budget year + 3. Figure 17-4 illustrates the relationship of the long-range plan to the short-range plan and demonstrates the 10-year maintenance planning period. This plan identifies major items which will be required during this time frame, such as replacement of roofs, exterior painting, replacement of ranges or refrigerators, the refinishing of floors, or resurfacing of streets.

The long-range plan is developed from a variety of sources which include the MARIP, facility history records, manufacturers' recommendations, the dates that major items were last accomplished and any other means which provide a basis for determining a requirement. The Project History Chart, illustrated in Figure 17-5, is an example of one method used to condense facility history records into a single document for ready use in the development of a long-range plan.

The long-range plan will, of necessity, be less definitive than the short-range plan in that the identification of requirements will not normally include costs or methods of accomplishment. As the years originally included in the long-range plan become a part of the short-range plan, the items identified will become increasingly detailed.

3. Requisition of Funds. Funds are requested for the accomplishment of the maintenance plan either through the submission of the annual operation and maintenance budget or the development and submission of projects. The maintenance portion of the budget reflects the necessary funding for the total known requirements for the next 2 years identified in the maintenance plan; i.e. the budget year and the budget year + 1. The budget also includes items which were unfunded during prior years and unplanned requirements which have been identified since the previous budget submission. Projects are used to request funds for maintenance efforts which were not funded through the normal budget process. The funding of the budget and the projects constitutes the Field Activity maintenance program which is ready for execution. Funds are provided for the accomplishment of the maintenance program by the issuance of the annual planning figure (APF) and appropriate funding documents.

B. MAINTENANCE EXECUTION

The execution of the maintenance program consists of the implementation of cost collection systems, obligation of funds, authorization for work accomplishment, performances of work, approval of work performed, and accounting for resources expended.

1. Cost Collection System. A complete cost collection system must be established and maintained to provide necessary budgeting and expenditure records which show the true costs of the operation and maintenance of family housing. The job order or charge number is the means within the cost collection system by which expenditures are accumulated for cost analysis and charged to the proper authorization. The numbering structure devised for job orders must allow for distinguishing family housing job orders from all others used at a Field Activity and must provide an index to itself or the master accounting classification code. The details pertaining to the establishment and use of job orders and the cost account structure are found in the NAVCOMPT Manual, Volume 3, Chapters 5 and 7.

200 Units - Category C - Built in 1952 Housing Site - Blue Bird Heights						
	Year	Remarks	Year	Remarks	Year	Remarks
Roof replacement	1964	114 enlisted units	1966	86 officer units	1982	project HR-3-81
Exterior painting	1956	all units	1961	all units	1969	all units
Refinish wood floors	1978	56 units at change of occupancy - see attached list	1979	123 units - see attached list (21 remaining)	1980	15 units - see list (6 remaining)
Replace floor tile	1972	114 enlisted kitchens				
Furnace	1957	1 units - 6476 Franconia Road - overhaul only	1977	overhaul 114 enlisted replace - 1 unit 7847 Heritage	1978	overhaul 84 officer units
Install vinyl siding	1974	all units in lieu of painting				
Modernize kitchens (Install dishwasher and disposals and new countertops)	1979	64 enlisted units (except tile) 23 officer units	1980	50 enlisted units (except tile) 35 officer units	1982	28 officer units
Modernize baths	1979	87 (3-br) units	1980	70 (4-br) units	1982	43 (3-br) units
Add concrete driveways and patios, construct carports and storage sheds	1979	87 (3-br) units	1980	70 (4-br) units	1981	70 (3-br) units
Reseal (slurry) asphalt roads	1979	enlisted area				
Repave (asphalt) roads	1981	officer area				
Replace/repair sidealks		work required develop project				

FIGURE 17-5

Project History Chart

2. Obligation of Funds. An obligation of funds is incurred when an order is placed, a contract awarded, a service is received, or similar transactions are entered into during a given period requiring future payment of money in an agreed amount. Obligations incurred include payments not preceded by obligations and adjustments for the differences between obligations and actual payments. The Field Activity is responsible for ensuring that funds are obligated in accordance with the assigned annual planning figures and that the work is performed satisfactorily prior to verification for payment.

3. Authorization and Accomplishment of Work. Accomplishment of maintenance, whether by station forces or contract forces, will be authorized by the housing organization prior to performance in one of three ways: repair projects, E/S chits, or work requests.

a. Repair projects are developed to accomplish a unique, major maintenance or repair effort. The performance of this work is authorized when a contract is awarded, a specific work request is issued, or a project order is issued.

There are two situations which warrant serious consideration of projects as a means of accomplishing the necessary maintenance repair work.

(1) The magnitude of a particular requirement makes it more advantageous to the Government to accomplish with a project vice routine maintenance.

(2) The deferred maintenance requirements from routine budget submissions accrue to the magnitude of cost and scope which makes it unfeasible to accomplish in a routine manner. The details and guidance for the development and submission of repair projects are contained in Chapter 20 of this Manual.

b. E/S chits are used to authorize both emergency maintenance and service work. E/S work is accomplished by personnel who are available either immediately for emergency work or within 14 days for service work, in effect bypassing the detailed estimating and scheduling process. The costing of all work performed on the basis of an E/S chit is restricted to jobs up to 16 man-hours. When a particular job exceeds this limit it must be costed to a minor or specific job order. The housing organization will review weekly, all completed E/S work requests for repetitive items or work which may indicate a problem pointing up the need for an investigation to establish the cause and a more permanent solution. This review is necessary due to the extremely high cost of this type of work.

E/S chits are used to initiate work as follows:

(1) Emergency work, which is defined as that work requiring immediate action to eliminate hazards to personnel or equipment, prevent loss or damage to Government property, or restore essential services that have been disrupted. Man-hour restrictions and material costs have no bearing on the definition of emergency work; the use of the E/S chit is the technique by which the work is initiated. However, when more than 16 man-hours are required to complete the job, transfer of all costs for the job should be made to a minor or a specific job.

(2) Service work is that work other than emergency which is initiated by the E/S chit into the work system and is restricted to 16 man-hours of effort plus material costs. When service work is initiated by the E/S chit and requires more than 16 man-hours to complete the job, it should then be accomplished as a minor or specific job and removed from the E/S system.

c. Work requests are used to initiate work in three ways: the recurring job order, minor job order, or specific job order.

(1) Recurring job orders provide for the performance of work or the provision of a service when needed during a predetermined period, usually a fiscal year. There are no man-hour limits to this job order, and the types of work are exemplified by grass cutting or street cleaning.

(2) Minor job orders are designed to accomplish work which will take a minimum of 17 man-hours but will not exceed 80 man-hours. There are no limits to the types of work which can be authorized by a minor job order, and the requests do not require the technical detail necessary for a specific job order, thus enabling the work to be expedited through the system.

(3) Specific job orders provide for the accomplishment of a unique job or service and contain explicit statements of work and a summary of all related costs incurred. The description of work should be in specific detail with a reasonably close estimate of scheduling and costs for accomplishment. There are no limitations to man-hours or types of work which can be performed by a specific work authorization.

4. Change of Occupancy Maintenance. The downtime for maintenance between occupancies should not exceed 3 working days. Work required incident to a change of occupancy will be determined by the housing organization immediately following the pretermination inspection, so that the work may be scheduled to start the day the quarters become vacant. Major repairs to units affecting habitability will be scheduled to occur at change of occupancy to avoid inconvenience to the occupants.

5. Approval of Work. All work performed, whether by station or contract forces, must be approved by the housing organization.

6. Management Reports. The Family Housing Management Information System produces a variety of reports which facilitate the management of the maintenance program. Reports which are particularly useful are the Budget Execution Report and the Maintenance Performance on Dwellings Report.

a. The Budget Execution Report depicts the annual budget of the Field Activity, the EFD's budget evaluation, the level of funding including amendments, and the year-to-date costs by line item and by category of housing. This report also compares the actual expenditures for each quarter to the budget. Additionally, a reconciliation is calculated to reflect the current status of funds. This report allows for the review of the budget request, the APF, APF amendments, and actual costs. It can also be used in the development of subsequent budgets.

b. The Maintenance Performance on Dwellings Report illustrates the distribution of funds for maintenance purposes and includes service calls, interior painting, and exterior painting. Three years of data are included which identify the number of E/S calls, cost per call, and the number of units painted. This 3-year spread provides a trend of maintenance expenditures and enables the redirection of expenditures toward the elimination of maintenance deficiencies.

Reporting systems developed at the Field Activity should be in consonance with the FHMIS in order to eliminate duplication of efforts. Other FHMIS reports which may be used in the management of the maintenance program are explained in Chapter 12 of this Manual.

V. STANDARDS OF MAINTENANCE

All family housing real property assets including dwelling units, garages, carports, grounds, and other facilities identified on the Family Housing Property Account are to be maintained to a standard that prevents deterioration beyond that which results from normal wear and tear and which corrects deficiencies in a timely manner to ensure the full life expectancy of the facilities. The level of maintenance shall ensure that all family housing facilities are free of missing components or defects which would affect the safety, appearance, or habitability of the facilities or would prevent any electrical, mechanical, plumbing, or structural system from functioning in accordance with the design. The quality of the work and the repaired areas shall be fully compatible with adjacent areas. Replacements shall match existing components in dimensions, materials, quality, finish, color, and design. During the performance and on completion of the work, debris shall not be allowed to spread unnecessarily into adjacent areas or accumulate in the work area itself. All such debris, excess material, and parts shall be cleaned up and removed at the completion of the job or at the end of each day work is in progress. Upon completion of work any fingerprints, stains, or other unsightly marks shall be removed. Wherever the term "pleasing appearance" appears in subsequent paragraphs, it shall be construed to mean an appearance similar to the original finished appearance.

A. STRUCTURAL EXTERIOR

The following are standards of maintenance for the exterior of family housing facilities:

1. Exterior Walls. An exterior wall is any wall that is exposed to the weather. All exterior walls shall be maintained in a structurally sound, weather tight condition, and in a good state of repair. The walls shall be free of noticeable pitting and corrosion, vegetation and animal life, deteriorated siding and trim, discoloration and graffiti, or other defects which would render an unsightly appearance to the exterior walls.

2. Roofing. All roofing, flashing, and gravel stops shall be maintained in a manner which preserves a weather tight seal and prevents corrosion and abnormal deterioration of individual components. Missing pieces shall be replaced to retain the original whole condition of the roof system.

3. Gutters, Downspouts, and Splash Blocks. Drains shall be maintained to function as originally designed to effectively channel run-off water away from the housing unit. Gutters and downspouts shall be maintained properly aligned and secured to the house with splash blocks correctly positioned to receive the impact of the drainage water. Gutters and downspouts shall be kept free of debris or any obstruction.

4. Overhangs. Overhangs will be maintained in an aesthetically pleasing state of repair with fascia and soffits properly secured. Bird screens and vents shall be maintained intact and free of corrosion.

5. Windows, Doors, Screens, and Shutters. Windows, doors, screens, and shutters will be maintained to operate smoothly and properly without binding, sticking, or other defects which would prevent their functioning in accordance with the design. Exterior doors, windows, and shutters shall be maintained in a manner which preserves the weather tight seal with caulking, glazing, and weather-stripping fully intact. New glass used for replacement work shall be the same thickness, type, and quality as the existing glass. Window screens and screen doors shall be maintained in good working order and free of torn fabric or frame defects to ensure that the screening function is effective. All hardware such as hinges, locks, strike plates, window operator mechanisms, door closures, springs, and so forth, shall be maintained free of corrosion or other defects which would prevent its operating as intended.

6. Miscellaneous Roof Structures. Chimneys, vent stacks, roof ventilators, or other items which pierce the roof shall be maintained to function as originally designed. Flashing shall be maintained to prevent leaking. All metal surfaces shall be maintained free of noticeable pitting and corrosion. Wind driven turbine ventilators shall be maintained free of corrosion or other defects which would prevent their operating as intended.

B. STRUCTURAL INTERIOR

The following are standards of maintenance for the interior of family housing facilities:

1. Interior Walls. Interior walls shall be maintained free of damage, deterioration, cracks, or defective materials. The aesthetic appearance shall be free of noticeable discoloration or other defects which would render an unsightly appearance to the interior walls.

2. Concrete Floors. Concrete floors shall be maintained in such a way so as to present a pleasing appearance and shall be in a usable and safe condition, free of cracked, spalled, or broken areas, or cracks which adversely affect the structural integrity of the floor.

3. Subflooring. Subflooring and structural members shall be maintained in a safe and usable manner. Deteriorated subflooring members shall be repaired or replaced to retain the original whole condition of the floor.

4. Hardwood Flooring. All hardwood floors shall be maintained in an acceptable state of repair and with a smooth, glossy finish, free of damage, deterioration, or buckling.

5. Floor Coverings. All tile floor coverings shall be maintained free of cracks, chips, and torn or excessively worn material to provide floor coverings which are usable and pleasing in appearance.

6. Ceramic Tile. All ceramic tile floors shall be maintained free of loose, damaged, broken, missing, or cracked tiles and with joints properly sealed to provide the intended watertight surface.

7. Stairways. Stairway treads, risers, nosings, balustrades, hand-rails, and other structural members shall be maintained in a state of repair which provides a safe and usable system and presents an aesthetically pleasing appearance.

8. Ceilings. All ceilings and framing members shall be properly secured. The ceiling shall be free of holes or cracks. Badly soiled, defaced or water damaged surfaces, or other defects which would render an unsightly appearance to the ceiling are to be repaired to restore surfaces to a good condition.

9. Venetian Blinds and Shades. All venetian blinds and shades shall be maintained to operate smoothly and properly, and kept free of damaged slats, deteriorated tapes, cords, hardware, rails, or torn fabric.

10. Interior Trim. All interior trim shall be free of unsightly appearances. Surfaces shall be maintained smooth, free of chipped or peeling paint, exposed nails, warps, cracks, rot, or termite damage.

11. Built-In Cabinetry. Cabinets, shelving, countertops, and similar items shall be maintained in a fully usable condition and with a pleasing appearance. Missing or inoperative hardware shall be replaced. The counter-tops shall be free of warped, marred, burned, or damaged areas.

12. House Accessories. Accessories such as mail slots, doorstops, mechanical door bells, door knockers, paper holders, soap trays, tumbler holders, towel bars, shower curtain rods, toilet seats, medicine cabinets, venetian blind brackets, curtain rod boards, closet pulley guides, house numbers, dryer vents, smoke detectors, and so forth, shall be maintained free of defects and in a satisfactorily functioning condition.

C. ELECTRICAL

Preventive maintenance of the electrical equipment and distribution system within each unit begins with the weatherhead. The electrical equipment, distribution panel, connections, grounds, outlets, switches, wiring, and lighting fixtures shall be maintained in a safe and usable condition. Receptacles and breakers with ground fault sensors shall be capable of properly detecting faults.

D. PLUMBING

All plumbing systems and fixtures intrinsic to each housing unit and other housing real property facilities shall be maintained in a good and safe operating condition and free of leaks and drips. Domestic water lines shall be maintained from and including the service cut-off box. Waste and sewage lines shall be maintained to the connection at the sanitary sewer main. Gas lines shall be maintained up to the cut-off valve at the pressure regulator.

All sinks, tubs, toilets, basins, lavatories, showers, and so forth, shall be maintained to operate properly, drain freely, and be free of chips, cracks, or excessive discoloration. All fixtures that cannot be repaired shall be replaced with plumbing fixtures that are of equal quality and of the current state of the art. All replacement water closets shall be water saver type that use approximately 3 1/2 gallons per flush. Defective shower heads shall be replaced with a water saver shower head.

E. HEATING, VENTILATION, AND AIR CONDITIONING (HVAC)

The required standard includes inspecting and maintaining heating, air conditioning, and ventilating Systems in good operating condition. All materials and equipment furnished shall be of the same grade, quality, and size as the original construction. All filters will be replaced at least twice each year, prior to heating season and prior to air conditioning season. All filters will be of the size and type recommended by equipment manufacturers. Heating and air-conditioning systems shall provide room air temperature consistent with Government energy conservation guidelines.

F. APPLIANCES AND EQUIPMENT

The maintenance, repair, or replacement of Government-owned household equipment and appliances are authorized by and subject to the restrictions, limitations, and approvals set forth in Chapter 15 of this Manual. Appliances and equipment shall be maintained in good operating condition and will have a pleasing appearance. Appliances and equipment which cannot be adjusted, repaired, or which have exceeded their usable life shall be replaced.

G. PAINTING

Painting shall include both the interior and exterior of the dwelling units. Touch-up or partial painting on interior or exterior of units will be accomplished as required to properly maintain housing assets. All new work and repainted areas shall be properly prepared and cleaned prior to paint application. Painted surfaces shall be smooth, completely covered, and free of brush marks and runs. Generally, the painting cycle spans 3 years for the interior and 4 years for the exterior. Workmanship shall conform to the quality standards established in NAVFAC MO-110, Paints and Protective Coatings.

H. GROUNDS MAINTENANCE

The following standards have been established for the maintenance of grounds.

1. Improved Areas. Grass shall not be allowed to exceed 4 inches in height and shall not be cut lower than 2 inches. After cutting, grass shall have a uniform height throughout, free of grass clippings in windrows, on walks, drives, concrete pads, outdoor athletic courts, baseball diamonds, or on any adjacent paved or otherwise finished surface. Grass areas close or next to buildings, hydrants, parking lots, manholes, fences, trees, hedges, and shrubs are included in the mowing operations. Trimming within the improved areas shall be accomplished each time such an area is mowed. Trimming includes the cutting back of all grass until even with the edges of all curbs, sidewalks, driveways walls, fences, guy wires, poles, tree trunks, foundations, garbage pads, or any other objects. After trimming, no grass shall extend over any paved or similar surfaces, and there shall be no evidence of clippings on any finished surfaces. Joints in all paved areas including streets shall be maintained free of vegetation.

2. Semi-Improved and Unimproved Areas. Grass shall not be allowed to exceed 7 inches in height and shall not be less than 2 inches in height. Areas containing buildings, structures, parking lots, poles, trees, ditches, exposed utilities, fences, or other obstacles shall have adjacent areas to such obstruction trimmed to the same general height as the open areas. Cuttings shall not be allowed to build up to the extent of possible damage to the undergrowth.

3. Hedges and Shrubs. Hedges and shrubs shall be trimmed or pruned prior to attaining a new growth of 6 or more inches. After trimming or pruning, shrubs shall not be left with square or flat tops but shall be pruned to control the habit of growth. Wounds larger than 1 inch in diameter shall be covered with an approved wound dressing. All clippings shall be removed and disposed of at time of pruning or trimming operations or at the end of each day.

4. Weed and Brush Control. Measures will be undertaken to control excessive growth of weeds or fungi in improved and semi-improved areas. After weed control measures have been applied, no damage to surrounding areas or potential danger to human or animal life shall be evident. Procedures and herbicides used are subject to existing local and Federal regulations. All undesirable trees or bushes with a ball diameter of 12 inches or less and which are within the area to be mowed will be cut and cleared from the area. Trees and bushes, which have been planted for aesthetic reasons or soil conservation measures, will be maintained.

5. Grasses and Ground Cover. Provisions shall be made for routine fertilizing, seeding, liming, and top dressing as necessary to maintain improved grass areas with a thick, uniform growth and uniform green color. Should bare spots become evident treatment to cure the cause shall be undertaken and measures to start or substitute new growth be initiated. These measures will be continued until the new growth is thick and strong. Fertilizer suitable for the purpose shall also be applied at routine intervals to the base of trees and shrubs and covered with a mulch of suitable material.

6. Irrigation. Grounds maintenance care includes the periodic watering of grass areas, shrubs, trees, and other vegetation to maintain growth during hot, dry periods when the prevention of dying vegetation is necessary. Watering may also be required when assisting new growth or directly after fertilizing, liming, or seeding.

7. Leaf Collection. Fallen leaves shall be removed from all improved grassed or paved areas and shrubbery. Removal shall be done at intervals which do not allow accumulation of leaves to the extent that the grassed areas underneath could become smothered or damaged. Disposal shall be in designated areas or off Government property.

8. Plant Disease and Insect Control. All infestations of diseases or insects in grassed areas, trees, or shrubbery shall be treated by means of applying approved control measures. The control measures shall stop the infestation with a minimal amount of damage to the infected area. Application of control measures will not cause damage to surrounding areas or create any danger to human or animal life. After the infestation is brought under control, steps will be taken to return any damaged vegetation to its condition prior to the infestation.

9. Policing of Grounds. Policing of improved and semi-improved areas shall be maintained to ensure the removal of debris such as paper, tree limbs and branches, refuse, cans, bottles, and other trash prior to each mowing and routinely during the nongrowing season. Areas to be policed include grass, sidewalks, streets, parking lots, athletic fields, and all other areas within the housing complex.

10. Drainage Systems. Drainage structures including swales, ditches, inlets, curb inlets, catch basins, manholes, junction boxes, grills, piping, culverts, and headwalls shall be maintained free of debris, obstructions, brush, and weeds to provide a system that functions as originally designed and to effectively channel runoff water away from the housing area. Exposed areas shall be maintained free of missing or damaged grills; curb inlets or manhole covers; spalled, broken, or cracked concrete surfaces; cracks or holes in asphalt surfaces; and erosion along swales and ditches.

11. Concrete Surfaced Areas. All concrete surfaced areas such as patios, sidewalks, garbage can pads, or any other areas not receiving vehicular traffic shall be maintained in a structurally sound and safe condition and in a good state of repair, at the original alignment and elevation free of damage, spalls, and major cracks.

12. Master T. V. Antenna. The Navy shall be responsible for maintaining any master television antenna system identified on the Family Housing Property Account from antenna to wall outlet. All antennae, cable, fittings, terminal outlets, amplifiers, and all other parts, components, and equipment necessary to provide reception of very high frequency and ultra-high frequency local broadcasts shall be maintained to provide good reception of color or black and white transmission.

V. FACILITIES SERVICE CONTRACTS

Frequently it is beneficial to the Field Activity to have the maintenance of family housing facilities performed by contractors. This generally occurs when there is an economic advantage to the Government or specific requirements are beyond the capability or Government work forces. When maintenance is performed by

a contractor, the Government must ensure that the stipulations of the contract are satisfied prior to the authorization of payment to the contractor.

Care must be exercised to distinguish the nature of these contracts in terms of construction, major repair work, and painting, which is subject to provisions of the Davis-Bacon Act, versus services not within the scope of the Davis-Bacon Act, such as maintenance, janitorial services, or trash removal. Comprehensive facilities service contracts may include some of both types of work, but the construction or repair work must be incident to the maintenance work of the contract. The Field Activity must also ensure that work considered to be a responsibility of the occupants is not included in the terms of a facilities service contract.

Contracts which span more than a 1-year period, in many instances, can result in significant advantage to the Government through reduced costs, increased competition, and improved performance, and should be considered where it is clearly demonstrated to be to the Government's advantage. When there is a reasonable possibility of advantage to the Government, multi-year contracting will be solicited at least as an alternative. Multi-year contracts require the prior approval of COMNAVFACEGCOM.

The quality assurance (QA) program, depicted in Figure 17-6, is the means by which the Government confirms that the quality and quantity of services and goods provided by the contractor are in compliance with the contract specifications. A knowledge of the basic terms used is necessary for an understanding of the QA program. Therefore, a brief definition of the frequently used terms is presented below.

1. Performance Indicator— An attribute of a task that indicates the level or quality of a performed service.
2. Quality Assurance (QA)— A program to evaluate certain attributes of products and services, to record such evaluations, and to recommend or effect remedial contract administrative action.
3. Quality Assurance Evaluator (QAE)— Personnel assigned to plan and perform quality assurance evaluations of products and services procured and to record and thus document their findings.
4. Quality Assurance (QA) Plan— A written plan which details what is to be evaluated, how evaluations are to be accomplished, frequency of evaluations, evaluation parameters and any other information that the QAE should have in order to perform effective QA functions.
5. Quality Assurance Evaluator (QAE) Schedule— A specific monthly plan of action for a specific QAE.
6. Service Contract Manager (SCM)— The individual assigned by the resident officer in charge (ROIC) to provide management of a service contract. Typical duties would include acting as the point of contact for the Contractor and QAE's, conducting the prestart conference, evaluating the contractor's proposals, and making recommendations for action which can be taken by the ROIC.

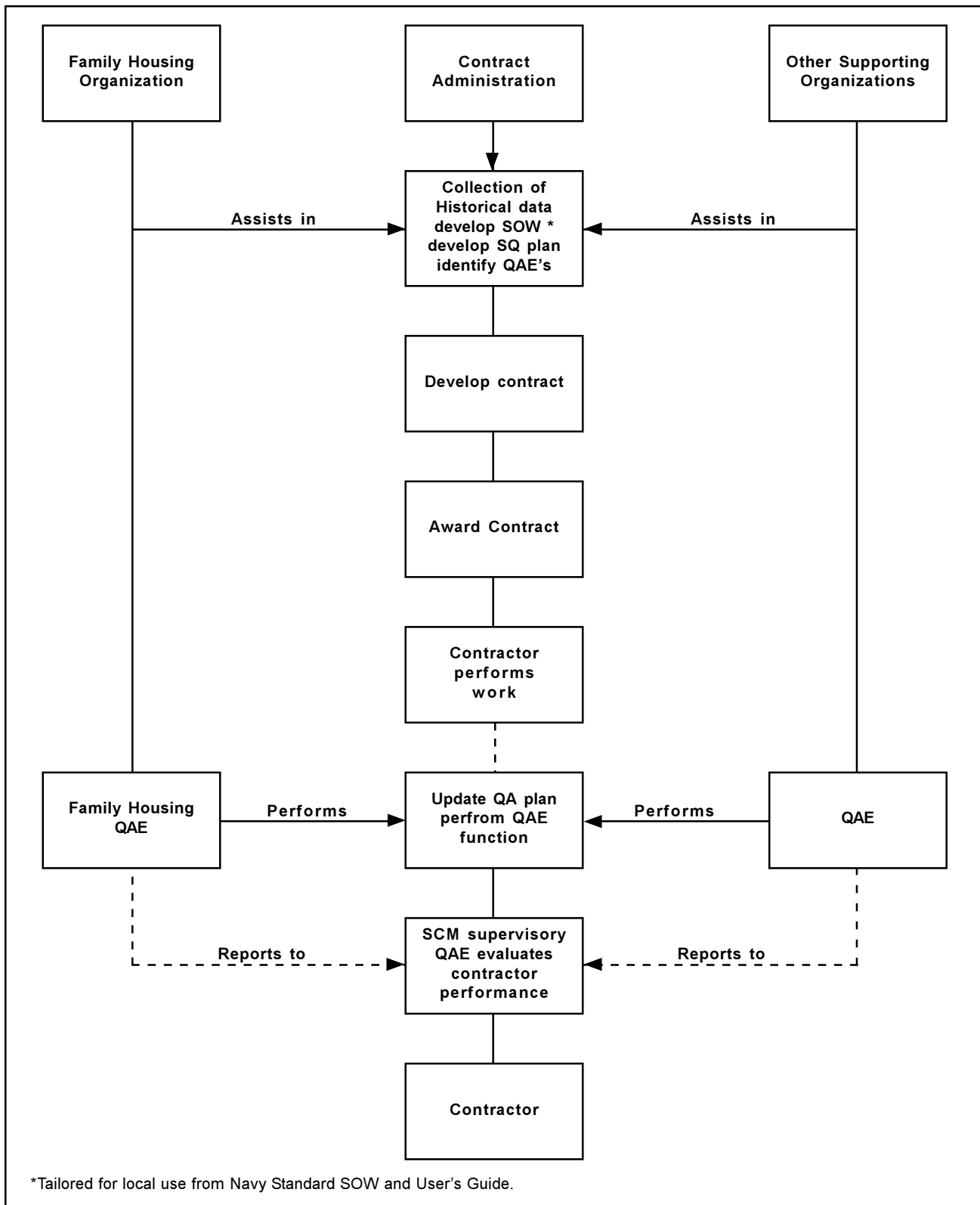


FIGURE 17-6
Quality Assurance Program, Facilities Service Contracts

7. Standard of Performance— The desired value or measure of a performance indicator.

8. Statement of Work (SOW)— A document which identifies functional requirements and establishes standards. A SOW is the framework around which a service contract is prepared. Functional requirements in a SOW are applicable to all contracted work forces.

9. Surveillance— The process of monitoring either by direct evaluation, observation, or other information sources, a contractor's performance.

10. User's Guide— A set of instructions and informational material prepared by the SOW developer to aid the user in tailoring a standard SOW to a application.

A. QUALITY ASSURANCE

When the Government purchases goods or services, there must be some means provided to attest to the value received for moneys spent. To do this, the Government must be able to confirm that the quantity and quality of goods or services received conforms to contract requirements. The Field Activities, as recipients of the goods or services are responsible for developing and implementing procedures that check or test to ensure that the Government is getting what it contracted for. These procedures are referred to as quality assurance (QA) plans. QA plans are neither designed for nor intended to add contractors. Contractors are responsible for providing a quality control program.

The quality assurance evaluation concept is based on a written plan carefully keyed to performance-oriented specifications. It focuses on the quality of product delivered by the contractor and not on the steps taken or procedures used to provide that product. It includes appropriate use of discreet planned evaluation techniques, unscheduled evaluation, and validation of complaints. This concept comprises the following elements:

1. Quality Assurance Evaluator (QAE). QAE's are Government personnel assigned by the Field Activity to perform quality assurance evaluations of products and services procured and to document their findings.

2. Statement of Work (SOW). A document that identifies functional requirements and establishes standards. SOW's are prepared for facilities services contracts and are the framework for the preparation of a service contract. The SOW becomes a part of the contract and, therefore, is binding on both the Government and the contractor. Standard SOW's and User's Guides are issued and form the basis of SOW's written at the Field Activity. When tailoring the standard SOW to meet local requirements, care must be taken to precisely identify the services or goods which will be specified in the contract.

The SOW must be written so that the quantity and quality of required work outputs are measurable. If quantity and quality are not measurable, it is difficult, if not impossible, to judge the contractors performance. The development of the SOW and QA Guide should be viewed as a single process. These

documents are interrelated: one defines required work outputs and quality standards while the other defines how work outputs will be observed and measured. The depth and detail of observations of work quality should be geared to the relative importance of the items of work under consideration.

3. Acceptable Quality Level (AQL). The AQL is a specified number of occurrences of noncompliance with specifications beyond which the performance of a contractor is considered unsatisfactory. The AQL is stated either as a proportion of the work that is found to be not in compliance or as a number of occurrences of noncompliance over a stipulated period. When the level or instances of noncompliance exceed the AQL, performance of the item of work, as measured by the indicator, is judged to be unsatisfactory. AQL's are used solely as a tool to evaluate the contract and are not made known to the contractor.

4. Quality Assurance (QA) Plan. A written plan which details what is to be evaluated, how evaluations are to be accomplished, frequency of evaluations, evaluation parameters, and any other information that the QAE should have to perform effective QA. Each contract requirement that is to be monitored must have a QA plan. QA plans must have the potential to support corrective action taken by the ROIC or the SCM when nonperformance or unsatisfactory performance occurs. Each QA plan should specifically address:

- a. Primary method of surveillance
- b. Level of inspection
- c. Acceptable quality level
- d. Quality of work
- e. Contract requirement
- f. Sample size
- g. Sampling procedure
- h. Evaluation procedure
- i. Performance criteria

5. Evaluation Worksheets. An evaluation worksheet is a document which lists locations, by service, to be monitored. Evaluation worksheets are prepared monthly, based on a QA plan for each day of the coming month during which surveillance is scheduled. Worksheets prepared for unscheduled services (e.g. E/S calls) will be prepared after the work has been accomplished but prior to work evaluation. Evaluation worksheet formats will vary depending on both the type of SOW and service performed.

Results of evaluation should be noted on the worksheet and specific comments written on the back. The evaluation worksheet is the formal document for all QA evaluations performed. Discrepancies noted by the QAE will be brought to the attention of the SCM by a copy of the worksheet.

There are three key ideas that are the basis for contract surveillance.

- a. Quality assurance relates to the output service provided by the contractor. The output service can result either from a contractor-developed procedure or from a Government-specified procedure. When the output is based on a contractor developed procedure, the procedures are only looked at on an

exception basis; that is, satisfactory service output as specified in the contract normally indicates that the contractor is using satisfactory procedures. The Government should be concerned with procedures used only when services are not adequately performed. When the procedure is specified by the Government, compliance with the procedure is the desired output service.

b. The contractor's compliance with contract requirements is monitored through performance indicators which are specified in the SOW. Performance indicators are attributes of the outputs that can be measured. A standard of performance is the desired value for a performance indicator and is the gauge used to measure the contractor's performance. Performance indicators and their associated standards or performance are essential for monitoring contractor performance.

c. When observed performance indicators show output which is not in compliance with contract requirements, the QAE must identify the cause of the problem. The QAE looks beyond service outputs to determine if the problem is caused by the Government or the contractor. If the cause of the problem rests with the Government, corrective action must be taken through Government channels; no action will be required of the contractor. If the contractor is at fault, the contractor is told to take corrective action and may be issued a Contract Discrepancy Report (CDR).

B. QUALITY ASSURANCE METHODS

There are five methods of quality assurance evaluation. A QA plan for any given service contract may utilize one or more to evaluate the contractor's performance. The five methods are: random sampling, planned sampling, 100 percent inspection, validated complaints, and unscheduled inspections.

Each of the evaluation methods provides a measure of contractor performance. One hundred percent inspection provides total knowledge of overall performance. Random sampling provides a statistically sound estimate to be made of the contractor's overall level of performance. The other three methods planned sampling, unscheduled inspection, and validated complaints, provide a subjective assessment of the contractor's performance. Demands placed on evaluation results will affect the method used. If, for example, it is necessary to collect sufficient information to default a "bad" contractor, 100 percent inspection should be considered. At the other extreme, minimal surveillance is required for an exceptionally "good" contractor and validated complaints may be sufficient.

1. Random Sampling. Surveillance based on random sampling is a QA method designed to evaluate some part, but not all, of the contract requirement being monitored. This method, based on statistical theory, estimates the contractor's overall level of performance for a given contract requirement. Using random sampling, any occurrence of a contract requirement is as likely to be evaluated as any other occurrence. With this type of surveillance, the contractor is unable to second guess which occurrences of work are most likely to be evaluated, the QAE's bias does not affect the specific occurrences of work selected to be monitored, and all occurrences of an item of work are assumed to have the same level of importance. Random inspection should be considered when

there is a large homogenous population and 100 percent inspection is not required or feasible. Random sampling requires that an evaluation schedule be prepared prior to evaluation for those services which are scheduled. Surveillance of those outputs of service not scheduled (e.g., E/S calls, work order, et cetera) is based on samples drawn from accomplished work. Evaluations are conducted by the QAE and consist of measuring performance indicators for selected items of work. Evaluation results are then compared to performance standards to check for conformance. It is important to note that evaluation results obtained by other surveillance methods cannot be mixed with results obtained by random sampling if an accurate estimate of the contractor's level of performance is desired.

2. Planned Sampling. Surveillance by planned sampling, like surveillance by random sampling, is designed to inspect some part, but not all, of the contract requirement being monitored. Specific occurrences of contract requirements which are to be monitored are selected for evaluation prior to their scheduled accomplishment. Planned sampling differs from random sampling by the way in which samples are selected. Sample selection is based on a subjective determination and sample size is usually arbitrary. QA plans based on a planned sampling are useful when contractor's performance at selected locations is poor or when importance of a contract requirement depends on the location of an occurrence. With this type of surveillance, the contractor knows that work performed at selected locations is more likely to be monitored than work at other locations; the QAE is able to direct his efforts to those areas where he feels they are most needed; and occurrences of work at selected locations becomes more important than other work occurrences. Planned sampling, unlike random sampling does not provide a means of making comparisons between observed contractor performance and true performance. When planned sampling is used, contractor's overall level of performance cannot be determined. Planned sampling provides a systematic way of taking a subjective look at service outputs and for forming conclusions about contractor's level of performance.

3. One Hundred Percent Inspection. One hundred percent inspection is a QA method which requires total inspection of a contract requirement. This approach is best suited for monitoring contract requirements which occur infrequently or are of great importance. One hundred percent inspection measures the contractor's true level of performance but is an expensive and time consuming method which should be used sparingly. AQL's are ideally suited to 100 percent inspection and can be stated as either proportions or absolute numbers.

4. Validated Complaints. Validated complaints is a QA method based on customer awareness. Customers familiar with contract requirements monitor the services provided by the contractor. When there is a case of poor or non-performance the QAE is notified. Upon notification, the QAE investigates the report and, if it is found to be valid, documents it. This method requires good relations between the QAE and customers. QA plans, based on validated customer complaints, cannot be scheduled prior to work accomplishment, and AQL's can only be stated as absolute numbers.

5. Unscheduled Inspection. Unscheduled inspections are impromptu evaluations of contract requirements whenever it is felt there is a cause. This method is very similar to planned sampling with the major exception being the omission of a planned schedule. Comments made about planned sampling apply here.

This type of surveillance should only be used to support other surveillance methods.

C. EVALUATION RESULTS

Analysis of evaluation results will lead to one of the following four outcomes for each service monitored: contractor's performance is excellent and no or very few problems noted; contractor's performance is acceptable but could be better; contractor's performance is mediocre; contractor's performance is unsatisfactory.

It is the QAE's duty to make QA evaluation results known to the SCM who then is responsible for taking the appropriate action. Depending on the evaluation results, the QAE may suggest specific actions to be taken.

1. Excellent Performance. If the contractor has performed best possible manner and there were few problems noted, the QAE might suggest two things. First, the contractor should be notified by the SCM that performance is satisfactory and to keep up the good work. Second, the level of surveillance might be reduced.

2. Good Performance. If the contractor has performed satisfactorily, with a varying number of defects but never exceeding the AQL's, the QAE should suggest that deductions be made for all documented defects; a normal level of inspection be returned if a lesser level is in use; and, for important services with defect rates approaching the AQL, an increased level of surveillance be used.

3. Mediocre Performance. If the contractor has exceeded, by a small number of defects, the AQL for some services performed, the QAE should suggest three things to the SCM. First, complete a Contract Discrepancy Report (CDR) for each monitored service which exceeded its AQL; second, make deductions for all documented defects; and, finally, increase the level of surveillance for problem areas.

4. Unsatisfactory Performance. If the contractor has displayed unsatisfactory performance, the QAE should suggest that, in addition to deductions and issuance of a CDR, the SCM should consider stronger measures such as a cure notice or show cause letter. The level of surveillance should be set as close to 100 percent inspection as possible in order to provide the SCM the supportive data needed for actions that may be desired.

D. POSITIONS REQUIRED TO MANAGE SERVICE CONTRACTS

1. Service Contract Manager (SCM). The SCM is responsible for the administration of service contracts. The SCM is the ROIC's representative and the contractor's point of contact. The SCM's prime duty is to make the contract run smoothly. If change orders are required, the SCM must process them and make a recommendation to the ROIC to issue a change; if the contractor is having problems, the SCM must recommend required action to the ROIC in matters involving quality, time, money, or safety and must coordinate matters of contract interpretations with the contractor, the contract specialist, and the ROIC. The

QA program provides the SCM with information on the contractor's performance. The SCM has technical control and supervisory responsibility for this program.

2. Supervisory QAE. Public works organizational components or their customer activities which have requirements for many QAE's may establish a supervisory QAE position. The supervisory QAE will be responsible for the coordination and management of QAE's. The supervisory QAE will act as the liaison between the QAE's and the SCM. For larger service contract volumes, the OIC may assign some or all of the SCM duties to the supervisory QAE, depending on the supervisory QAE's experience and the Field Activity's involvement with service contracts.

3. Quality Assurance Evaluator (QAE). QAE's perform the actual contract surveillance and report to the SCM. The QAE is in the public works organization, may be on a customer's ceiling, and may be physically located in any one of the functional areas, or within the contract administration division. Administratively, QAE's report to their parent organization, but on service contract matters they report to the SCM. Under the SCM or supervisory QAE direction the QAE will prepare and implement a QA surveillance plan.

E. FAMILY HOUSING QUALITY ASSURANCE EVALUATORS

The theory of quality assurance evaluator (QAE) assignment is that such personnel should be provided from the organization which would perform or direct the function in question, if the work or service involved were performed by Government forces. This indicates that habitability elements, such as change or occupancy or service call work, of family housing service contracts will be evaluated by QAE's assigned from the family housing organization and that maintenance of a more technical nature, typically structural, mechanical, electrical, roofing, and other exterior shell or utilities distribution work, will be inspected by QAE's assigned from other public works organizations.

Competent accomplishment of QAE functions requires in-depth technical knowledge of the function being evaluated, detailed knowledge of the contract specification under which the function is being procured, and general knowledge of contract administration procedures. Assignment of QAE's is anticipated to provide at least the first of two of those skills. General knowledge of contract administration is intended to be imparted to QAE's by the OIC staff. In cases where the OIC staff is itself new or very small and the service contracts are complex, it is desirable to have the QAE attend the Civil Engineer Corps Officer School (CECOS) Service Contracts Course. When several family housing project managers have a QAE role, there should be a supervisory QAE, and this person should be required to attend the CECOS service contract course prior to the time of assuming the responsibility.

Specifically, when family housing personnel are performing supervisory QAE or QAE functions they are responsible to the SCM and take their technical direction from that individual. The functions of a family housing QAE are enumerated below:

1. Assist in contract administration, as delegated by the ROIC/SCM, and may approve minor deviations not involving changes in contract time, price, or

basic design but has no authority to allow deviations from essential requirements.

2. Review contract specifications prior to advertisement.
3. Know and understand specifications, responsibilities, and relationships with the family housing organization and the contractor's organization.
4. Attend site visits with potential bidders and post-award, pre-work site visit with contractor.
5. Attend pre-performance conference.
6. Initiate, review, and retain documentation to include:
 - a. Contract preparation including detailed work requirements
 - b. Inspection schedule or surveillance plan
 - c. Order for work or work authorizations
 - d. Inspection reports on contractor performance
 - e. Provision of information for notices (cure, show cause, terminate, or renew)
 - f. Verification for payment

Family housing QAE's do not administer contracts but rather assist the SCM through the verification and documentation of the performance of the contractor. The effectiveness of the QA program is dependent upon the knowledge of each QAE. QAE's should attend the service contracts course at CECOS and the EFD training course on facilities service contract inspection.

7. Determinations requiring in-depth technical knowledge of structural, mechanical, electrical, or utility distribution systems will be performed by QAE's assigned from other public works organizations.

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